RAPID MICROBE DETECTION

UTAH STATE UNIVERSITY

CENTER

The focus of this center is the development of technologies that lead to the real time detection of pathogenic micro-organisms. This involves the development of novel pathogen capture molecules, platform development, prototype development, and commercialization. Industries where this technology is useful include pharmaceuticals, biomedicine, biotechnology, veterinary, production agriculture, food processing, public health, defense, and water and sewage treatment.

TECHNOLOGY

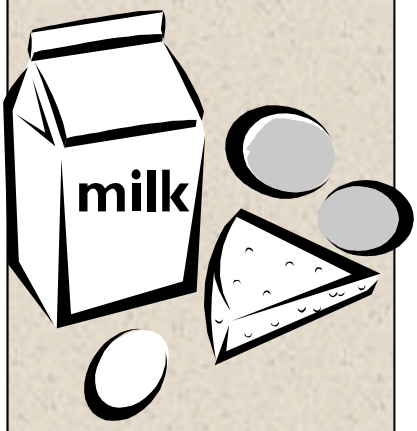
The primary focus of the Center is bacterial detection, but other targets are also investigated. To date, four technologies have been developed: ImmunoFlow, ImmunoDNA, GlycoBind, and TissueTag. Each technology has a unique use and application, but is not limited to a single type of use. For example, ImmunoFlow has many fields of use ranging from water to air, and has the potential to detect many types of bacteria. Initial prototypes are available for Bacillus globgii spores, Lactobacillus, Salmonella and E. coli O157 cells. Each type of assay has a maximum detection time of 30 minutes with a sensitivity of about 1000 cells. A unique feature of each technology is that it is volume independent; both large (tens of liters) and small (1 to 100 milliliters) samples are commonly used. Each technology is at a different stage of development, with ImmunoFlow being the most developed.

ACCOMPLISHMENTS

The Center has licensed the ImmunoFlow technology to Stellar Technologies. Demonstration of a prototype to several large food companies began in 2002.

THINK TANK

What if there was...



Being able to detect less than 10 cells of a harmful pathogen, such as salmonella or E. coli, in a quart of milk, within 30 minutes?

Bart Weimer
Marie Walsh
Utah State University
NFS, UMC 8700
Logan, UT 84322
435-797-3356
milkbugs@cc.usu.edu
mkwalsh@cc.usu.edu